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Swine-Fever Pneumonia.

At the Yarmouth meeting of the National Veterinary Association a number of the speakers in the discussion on Professor McFadyean's paper referred to pneumonic lesions as being less common now than twenty years ago. Some said the type of disease had changed but others asserted that pneumonia was still a common lesion. Professor McFadyean, in his reply, said he was anxious to obtain a pig's lung showing distinct hepatisation, taken from a clear case of swine-fever. The professor has now returned from his holiday and would be thankful to any practitioner who would forward him hepatised lungs and a portion of bowel showing characteristic lesions, taken from the same pig. If such specimens are forwarded to the Board of Agriculture, a letter to the Veterinary College announcing the fact would enable Professor McFadyean to examine them.

As the disease is not yet extinct in Great Britain, someone interested in correct pathology might well take the trouble to supply specimens for examination.

The Origin of Bovine Tuberculosis.

Whether human tuberculosis originated by transmission from animals, or bovine by transmission from man, is not of practical importance. We may be content with the fact that now men and oxen infect their own kind in probably 95 per cent. of cases. That it is possible to infect animals by tuberculous material derived from man is true, but the fact is of very small importance in relation to the stamping out of the disease in bovines. Diseased men have transmitted diphtheria to cats, but we know no case in which infection has passed from cats to man. Glanders has been transmitted from horses to man, but there is no experience of the horse suffering by transmission from man. It may be granted that a tuberculous man is more likely to transmit disease to animals than a glandered man is to transmit disease to horses, because in one case he is confined to bed, in the other he may march about ejecting infectious material for months.

In the open air transmission from man is next door to impossible. The danger is only in sheds, and is then confined to the possibility of a tuberculous man discharging infectious material into the food of the animals. Experiments have shown over and over again that a very small dose of bacillus-laden matter when ingested with a large quantity of good food is innocuous. We have then a danger to animals from diseased men only when large quantities of infected matter are discharged. It is not likely that phthisical attendants on cows or pigs go out of their way to constantly expectorate into the food or mangers of the animals. Even an infected attendant is not very likely to transmit disease to animals.

No well arranged scheme for controlling tuberculosis would be allowed to pass the legislature without a clause prohibiting phthisical persons from attending in cow-sheds. If ever we have an Animals' Tuberculosis Act sanitarians will see to this, not directly for the protection of animals perhaps, but because of the danger to milk. Probably without an Animals' Act the consumptive man will soon be forbidden any direct relations with the production of meat or milk.

That bovine tuberculosis might be stamped out by proper measures is certain, and we believe that the possibility of our herds becoming re-infected from diseased men is so slight as to be a negligeable quantity.

The Sanitary Congress at Newcastle.

This meeting of sanitarians has been a great success. Civil engineers, local authorities, medical officers of health, and pathologists all contributed their aid to improve the public health, and veterinarians were not absent. The question of tuberculosis was a prominent one, no less than four papers being devoted, chiefly, to preventing the transmission of disease from animals to man. In the short report we give of proceedings in Section I—Preventive Medicine—will be noticed a reference to the place of the veterinary surgeon in the matter of meat and milk inspection. Dr. Sims Woodhead gave our profession a timely testimonial, and no man outside our ranks is in a better position to fairly estimate our value. He examines our graduates, he knows many of our practitioners and he has co-operated often with our experts. Dr. Woodhead's estimate is very grateful to a small profession doing its best to meet public requirements. We intend next week to publish an abstract of the paper, and now will only quote one sentence—"Whenever I want a reliable opinion on any animal or whenever I desire to learn anything about the natural history of a disease in an animal, I at once appeal to a veterisurgeon; and in most cases I am thoroughly satisfied with the opinion that I get."

Boards of Agriculture and Local Authorities please read, mark, learn, and inwardly digest!

CASES AND ARTICLES.

DISLOCATION OF THE THIRD CERVICAL ARTICULATION—DEATH.

By E. Wallis Hoare, F.R.C.V.S.

Subject.—A light harness mare, six years old.

History.—About 3 p.m. while being harnessed in a yard in town, suddenly broke away from attendant and ran with great force through a narrow wicket into the street, carrying away the wooden part of the former; then, according to the statement of an onlooker, she collided with a lamp post, and ran a short distance until she was stopped by some person in the street. She walked with a staggering gait and depressed head, and was slowly brought from the northern part of the town to the southern for treatment.

The following symptoms were presented:—

Staggering gait, inability to raise the head, the latter being turned to the left side. The right side of the neck was much swollen and very tender to the touch, and a distinct bony enlargement could be detected at the upper part of the cervical region. The respirations were stertorous in character, the pulse slow and feeble, the pupils dilated, and there was inability to swallow either solids or liquids.

As the animal was inclined to fall, she was carefully placed in slings and kept under observation. She kept pawing in a listless manner, with the head depressed: and about 7.30 p.m. became uneasy, breathed rapidly, and died after a few convulsive struggles.

Autopsy.—A deep incised wound on the upper nasal region, and a lacerated wound over the off eye. Extensive engorgement along the right side of the neck, the jugular vein was fully distended and contained a firm light-coloured clot. The muscles at the upper region of the neck were bruised and discoloured and in parts there was extensive extravasation of blood. The third cervical vertebra was dislocated upwards and towards the right, the right anterior oblique (articular) process being completely above that of the dentata. The spinal cord at this region showed its coverings discoloured, while the cord itself was in a semi-fluid condition, of the consistence of cream.

Remarks.—Lesions of this nature are by no means commonly met with, and it is clear that some extraordinary violence must have occurred to produce this dislocation.

When we consider the large number of accidents that happen to horses that are "runaways" and also the dangers to which young horses are exposed during the process of "catching and handling" we must admit the rarity of fatal results of this nature.

The Toxic Effects of the Nitrate of Potassium.

Cases of poisoning by the above agent are of sufficient rarity to render the present one of some interest.

History. A farmer sent a messenger to a general merchant in town for 7lbs. of Epsom salts. This was duly received with an invoice entered "7lbs. of salts" price 10d. A few days afterwards he gave a dose of about one pound of this to a bullock that was ailing, and was surprised to find the animal greatly depressed and weak shortly after administration, and dead in a few hours. The death at the time was ascribed by the owner to natural causes. About a weak after this he administered 1½lbs. to a large cow, due to calve shortly, as a preventive to milk fever. In half an hour she lay down, commenced to breathe heavily, and appeared in great distress, groaned frequently, and finally became unable to rise. He came to me in a great state of excitement at 9 p.m. bringing with him some of the drug, which he suspected was not Epsom salts. I easily recognised the salt as nitrate of potassium, and prescribed a few sedative doses with demulcents, but the animal died about 4 a.m. in a comatose condition.

Autopsy on following day. Minute extravasations of blood over surface of abdominal walls; abdominal veins greatly distended. The blood of the entire system showed no tendency to coagulation, and was very dark in colour. Rumen full of ingesta, great maceration of lining mucous membrane. Abomasum full of dark coloured fluid, very fœtid, mucous membrane deeply inflamed and almost black in patches, upper portion of small intestines congested. Brain not examined. No other lesions apparent. Contents of abomasum forwarded to analyst whose report stated that nitrate of potassium was present in large quantities, and also that the salt purchased was the same substance.

The merchant who supplied the drug agreed to compensate the farmer and a sum of £28 was paid to the latter by him, rather an expensive mistake on the part of the assistant in the shop, but showing the danger of stockowners purchasing drugs of any but qualified chemists.

THE STAMPING OUT OF BOVINE TUBERCULOSIS.

I was rather surprised when reading your journal to think that you should consider tuberculosis of bovines a disease that can be stamped out. That tuberculosis may and should be brought into manageable proportions I for one readily admit, but how can it be thoroughly eradicated? Are we not to believe that tuberculosis of man and other animals is produced by the same bacillus, therefore the disease can be communicated from man to bovines. To blame bovines alone for this disease is thoroughly unjustifiable. Bovines have as much to blame the human subject may be for acquiring the disease as man have to blame bovines. We certainly have no official record up to date as to which animal was the original host of this bacillus, man may have been as far as we know.

If any person is to set himself thoroughly to work to eradicate tuberculosis man and every host of this disease must share in the slaughter. The practitioner of human medicine blames bovines for producing the

disease in man and properly so, but does he guard against the inroad of the disease in his own quarter.

Can any law be passed to stop tuberculous men and women from going through the form of holy matrimony or cohabiting with one another thereby causing a source of infection to themselves and offspring, and may be animals by conveying the bacillus to each other; of course I do not mean by this any hereditary tendency, however I guess few would care to be inoculated with tuberculin before marriage.

I sincerely trust the Board of Agriculture will take the disease in hand, yet eradication of tuberculosis by the compulsory slaughter of bovines only is, in my opinion, impossible, and should the veterinary profession approach the Board with a stamping-out programme failure will be the result.

G. Upton.

THE PHONENDOSCOPE.

By John Blakeway, F.R.C.V.S., Birmingham.

Seeing in *The Veterinary Record* of 22nd August, an advertisement of the above, with a note on its uses by Captain Smith, I thought a few remarks might be acceptable to practitioners who have not had the opportunity of testing the instrument.

The phonendoscope is manufactured in Germany and patented all over Europe and America, its object being to intensify the physiological and pathological sounds of the body. To quote from the printed instructions accompanying, it has the shape of a large watch, the front part being composed of two discs, one above the other, which can either be used together, or the exterior (less sensitive) one may be removed. To the opposite side are attached the ear tubes. The button-ended stick supplied with it (which, when in use, is screwed into centre of outer cap or disc), is to my mind of no use in veterinary practice.

Some few months hence I tested the phonendoscope on the horse and dog. With all deference and respect to Captain Smith, I must say I failed to get any satisfactory results, and feel he is over-estimating its usefulness in describing it to the profession as a "God-send." The heart sounds were fairly distinct, but the sounds of inspiration and expiration were anything but plain, and I should prefer to rely upon the naked ear; of course my failure may have been due to incompetence, but I may add that some of the medical profession object to the instrument, on the ground that they cannot lose the heart sounds; in fact in the human subject, as anyone may verify, the *heart sounds* may be heard all over the region of the chest, back and front. I pen this short note thinking that possibly some of your readers might secure the phonendoscope with the idea they will be able easily to distinguish all the chest sounds in our domestic animals, and then meet with disappointment as the result of their trouble. Of course a new instrument should have a fair trial, and perhaps some other practitioner may be able to give better results from his experience than I am warranted in doing.

EXTRACTS AND NOTES.

BOVINE TUBERCULOSIS.

By Nicholson Almond, F.R.C.V.S., Chelmsford.

(Abstract of paper read before the National Veterinary Association.)

This paper is intended to indicate the necessity for, and to introduce for discussion, the subject of "a practical method of gradually, effectively, and cheaply reducing bovine tuberculosis to manageable proportions, and ultimately stamping it out." Before proceeding to the chief subject-matter of my paper, it may be desirable briefly to indicate that the welfare of the community demands the carrying out of some such measures as those proposed.

As one of our objects is to inform and enlighten the public, we may make a few inquiries as to the prevalence of the disease in the human subject and in cattle, and we are much impressed by the statistics put before the world in the report issued by the Royal Commission on Tuberculosis. All the members of several herds of cows, numbering in all 300, were slaughtered in Edinburgh in 1890, of which no less than 120, or forty per cent., were affected with the disease, the percentage varying between twelve per cent. and eighty-three per cent., according as they came from one or another cowhouse. Of 132,294 oxen and cows slaughtered in Copenhagen, 23,305 showed evidence of tubercle, a percentage of 17·7. Of 185,765 calves slaughtered at the same place only 369 were affected, a percentage of 0·2. Of 142,874 oxen and cows slaughtered in Berlin, 21,603 showed evidence of tubercle, a percentage of 15·1; of 108,348 calves slaughtered, only 125 were affected, a percentage of 0·11. We have no similar records in the United Kingdom, but the Commissioners "have reason to believe that the facts would exhibit a broad resemblance if such records could be obtained," which statement my own experience enables me to endorse. From Professor Brown's Annual Report to the Board of Agriculture we learn that of the cows slaughtered by order of the Board in 1892 over 22 per cent. were tuberculous, and among the other cattle slaughtered the percentage was nearly fifteen.

The Commissioners further add that full-grown cattle *contrast very remarkably with calves* in all records, to which statement of fact your attention is especially directed. The statistics quoted, and many similar might be given, may be accepted as showing the great prevalence and wide distribution of the disease, but other evidence bearing upon this point will presently be given. The influence this disease has upon the destruction of human life has already been stated, but it may be as well to give the Registrar-General's actual figures for England; they are as follows:—in 1893, 63,742 died of tuberculosis; in 1894, 59,301 deaths were due to the same cause, and from evidence that you will presently have laid before you it will be seen these returns are understated. It is hoped these statements and figures may have conveyed to all some idea of the extreme importance of the subject we are dealing with. We have also to consider the relation of the disease in cattle to that in the human subject. Is this destruction of human life in any way connected with the disease in cattle? Is the disease in man and animals identical? The answer to these questions must be given in the affirmative. The time at our disposal will not allow me to give evidence in detail upon these points, but could I do so it would be found overwhelming and conclusive. The Royal Commission on Tuberculosis in their report say: "We regard it then as established that any person who takes tuberculous matter into the body as food incurs

risk of acquiring tuberculous disease, and we know that this matter may be found in parts of animals affected by the disease."

And they add—"The condition required for ensuring to the milk of tuberculous cows the ability to produce tuberculosis in the consumers of their milk, is *tuberculous disease of the cows affecting the udder*." It should be noted that this affection of the udder is not peculiar to tuberculosis in an advanced stage, but may be found also in mild cases.

Further, with reference to this disease, Dr. Martin writes: "The milk of cows with tuberculosis of the udder possesses a virulence which can only be described as extraordinary. All the animals inoculated showed tuberculosis in its most rapid form."

From the evidence now before us can there be any reasonable doubt that contaminated milk is largely responsible for the high mortality from tabes mesenterica in children of the milk drinking age, and that it materially contributes to the number of victims of tuberculosis at all ages? And if so, we think we have made out a case for prevention, to which part of our subject we will now direct your attention.

Prevention and Suppression.

If we wish to suppress any plague or prevent it spreading, it will be obvious that the first step in this direction is to be able to recognise the thing we are about to deal with, and in this matter of tuberculosis it resolves itself into a question of diagnosis. A few years ago this was an insurmountable barrier to its suppression, but by the discovery of tuberculin and, in the hands of capable men, its diagnostic powers, we have an *almost infallible* means by which we can divide the diseased from the healthy. This agent has now been in our hands for a considerable time, and has been subjected to a vast number of tests. The outcome of it all has been to discover certain sources of error, which to a large extent may be avoided, and to establish beyond all reasonable doubt that it may be relied on, in careful hands, for diagnostic purposes. The scope of my paper will not admit of the discussion of this point, nor is it necessary, as the statistical evidence, English and foreign, is accessible to all the members of this Society.

All who have not done so should read the best exposition upon tuberculin we have met with in English, published in the 'Journal of Comparative Pathology and Therapeutics,' 1895. The article in question is a translation of one contributed to the Proceedings of the Sixth International Veterinary Congress, by Dr. Bang of Copenhagen. It having been suggested that the use of tuberculin may aggravate existing tuberculosis, he says, "In basing an opinion on the whole of my numerous experiments, I can affirm that such an exacerbation of tuberculosis in consequence of inoculation with tuberculin is not observed in the ox, save exceptionally, and then only in the case of advanced tuberculosis." "For some years tuberculin has been used in Denmark on a large scale, and the demands of agriculturalists go on increasing. Such a movement would not be possible if inoculation in general provoked an exacerbation of the malady."

The herditary nature of tuberculosis engaged the attention of the Biennial Congress on Tuberculosis in Paris, 1891, and some interesting important experimental negative evidence was produced. Until the isolation of the *Bacillus tuberculosis* it was generally believed the disease might be transmitted direct to the offspring from either sire or dam, but the more attention that is given to the consideration of this point the less likely it appears to be true. The result of the investigations of several authorities who spoke upon the subject at the congress above mentioned goes to show that the most that is inherited is a suitable soil, or constitution, favourable to its growth should the *Bacillus tuberculosis* gain access in any considerable quantity into the body, actual congenital tuberculosis being a great rarity.

M. Hutinel has also inoculated guinea-pigs with fragments of the placenta and other organs of stillborn infants of phthisical parents with a negative result. Out of 118 necropsies of children under one year, he found tuberculous lesions only in four instances. After one year the number of tuberculous patients increases rapidly, one third of infants between one and two years old being thus affected. Boltz in his Inaugural Dissertation at Kiel, 1890, gives the following figures regarding the proportion of tuberculosis among children. Out of 2576 children, whose bodies were submitted to a post-mortem examination in Kiel between 1873 and 1889, there were 424 cases of tuberculosis, or 16·4 per cent. and the following table shows the percentage at different age.

Stillborn children	0·0	per cent.
Up to 4 weeks old ...	0·0	„
„ 5 to 10 weeks old ...	0·9	„
„ 3 to 5 months ...	8·6	„
„ 6 to 12 „ ...	18.3	„
„ 1 to 2 years old	26·8	„
„ 2 to 3 „	33·0	„
„ 3 to 4 „	29·6	„
„ 4 to 5 „	31·8	„
„ 5 to 10 „	34·3	„
„ 10 to 15 „	30·1	„

You are requested particularly to note that of these 2576 children not one was tuberculous at birth nor up to four weeks old—very strong evidence against the direct transmission of the disease from sire or dam.

In the following table (an extract from an article contributed by Dr. Bang, Professor in the Veterinary College, Copenhagen, to the Proceeding of the Sixth International Veterinary Congress are grouped animals (inoculated with tuberculin) in different classes according to age, namely, first, six months and less; second, one year; third, two years; fourth, adults (that is to say, more than 2½ years.)

6 Months and Less.		1 Year		2 Years		Adults.	
Healthy.	Subjects Reacted.	Healthy.	Subjects Reacted.	Healthy.	Subjects Reacted.	Healthy.	Subjects Reacted.
5,793	1,077	6,832	2,792	4,638	3,225	10,833	11,129
84·3	15·7	69·7	30·3	59·4	40·6	49·3	50·7

This table demonstrates the relatively healthy condition of the young classes, and the progressive increase in the number of tuberculous individuals in the following years. It proves that tuberculosis is in general an acquired and *not a congenital disease*. Rare cases of congenital tuberculosis do occur when the mother is the subject of generalised tuberculosis, but the calf seldom survives. Professor Bang says, and all the evidence at our disposal points to the same conclusion, as long as the tuberculosis is latent in the cow the calf will be in perfect health at the moment of its birth, and he very pertinently remarks as regards the much-debated question of disposition, "it will no longer have any practical value when we shall be in a position to avoid infection. Without infection no tuberculosis."

We have now dealt with the cause of tuberculosis, its prevalence, which is unmistakably great, in both the human and bovine families, we have endeavoured to show the important influence of the "great uncooked food" of infants and young children (milk) upon their health, in early, and often, after a period of latency, pro-

bably at later periods of life; we then, as a step towards prevention, considered the means at our disposal for the recognition of the disease in all its stages, and the influence of hereditary transmission upon its continuance and propagation. These several questions may each and all be regarded as means by which the end at which we aim may be advanced, and a proper understanding of them should enable us to complete what remains to be accomplished, namely, to devise or adopt the best conceivable and practical means of abating the plague and ultimately stamping it out.

Professor Bang says, "To combat tuberculosis in the ox we ought: *First.*—To separate the healthy subjects from the diseased, that is to say, give them a special byre, or, if that is not possible, separate the byre into two by a close wooden partition. The byre ought to be carefully disinfected. The same utensils must not be used for the two compartments. The two sets of animals ought, if possible, to have separate attendants; or if not, the attendant ought to attend the healthy group first in special clothes and boots. The healthy group to be examined every year.

"*Second.*—To avoid infection of the calves by milk, by giving them only that which comes from cows that have not reacted, or milk which has been boiled or heated to 85°C. The calves thrive very well with this method of feeding from the second day after birth. The colostral milk given the first day may be heated to 65° C.

"*Third.*—To avoid congenital tuberculosis, by not rearing calves from cows tuberculous to an advanced degree, or at least submit them as soon as possible to the tuberculin test. The calves of parents that are affected with latent, or but slightly advanced tuberculosis, may be reared without any fear. They ought, however, to be separated immediately from the infected byre, and preserved from infection by milk in the manner described.

It appears to me the true principles which must govern the suppression of tuberculosis are set forth by Professor Bang, and have been practically tested at his experimental farm during a period of over three years, with satisfactory results. Recognising the disease, as the evidence on the subject compels us to do, as propagated by infection, the "reacting animals" (diseased) are separated from those which do no not react (healthy). It having been established that calves (except in very rare cases) are born healthy (even when their dams are affected), they are immediately after birth removed from the danger of infection and ordinary measures adopted for preventing re-infection of the healthy portion of the herd.

Infected Herd.

When we come to deal with the infected portion of the herd, differences of opinion may arise. We certainly think steps should be at once taken by government to separate herds into two groups, those which react to tuberculin and those which do not, the strictest possible isolation of those animals of a herd which react being enforced.

All such animals should be marked in such a way as to be unmistakable. "Ear marking" by puncture appears to me to be most simple and commendable, it being of such a character as to be irremovable and can be seen at a glance. Having separated the affected and prominently marked them, what shall be done with them? Some have gone so far as to advocate immediate slaughter, but even if that were desirable, owing to the great number affected the gaps in our herds would be so great it could not well be resorted to, and on the other hand the expense would be such as to prohibit such a drastic measure. Fortunately the nature of the problem is such that it is unnecessary, and, in my opinion, it would be folly to propose it. We have, besides a great deal of other evidence, experimental proof extending over a period of more than three years that the cows of this group may be used for breeding healthy calves to fill vacancies as they occur in the healthy herd from various causes. Then with regard to the milk, there is abundant evidence to show that the milk of such cows is a healthy secretion except when the tuberculous animal is the subject either of generalised tuberculosis or of disease of the udder (other than superficial lesions), in either of which case the milk should be condemned.

Our government could not do better than follow the example of that of Denmark, and furnish tuberculin and skilled aid gratuitously for inoculation purposes. By such action alone, there is little doubt many would voluntarily adopt the precautions suggested, especially if they could be convinced of the truth of our statements; but upon these matters there is much prejudice and old convictions to be overcome in quarters where we might have expected cordial co-operation. If the above suggestions can be acted upon, the introducer of this subject for discussion is quite satisfied that a practical method will then have been inaugurated of gradually, effectively, and cheaply reducing bovine tuberculosis to manageable proportions, and ultimately stamping it out.

Discussion.

Mr. W. Hunting: This paper, Mr. President, seems to me to come with a wrong title. I was never more disappointed in my life than when I read the paper after reading this extremely attractive title: "A practical method of gradually, effectively, and cheaply reducing bovine tuberculosis to manageable proportions, and ultimately stamping it out." Now, that is a large order, and I should like to draw attention to the paper, and to see how the promise of the outside agrees with the performance of the in. Professor Almond has devoted some six or seven pages to showing what a grave disease tuberculosis is, and in pointing out the absolute necessity, for the good of the human being and for the good of the animal, of getting it reduced to manageable proportions, and ultimately stamping it out. Then we come to the preventive measures. He says, "It resolves itself into a question of diagnosis." We really only make a very small initial start in arriving at the diagnosis; and the question is, when you have dirgnosed it what are you going to do then? Follow the example of Denmark says the paper! The example of Denmark is to trust to voluntary effort and to supply tuberculin for nothing. Do you call that a method of stamping out tuberculosis? It does not take even the initial step, it does absolutely nothing. This is the sum and substance of the paper: "Follow the example of Professor Bang on the experimental farm, test with tuberculin, and then wait!" Professor Bang says there are three things necessary; they are quoted here: You should separate the healthy subjects from the diseased; you should avoid the infection of calves by milk; and you should avoid congenital tuberculosis by not rearing calves from diseased animals. It is all very well to give voluntary advice, but there are no methods of carrying it out suggested here. Then we get a little further, and on p. 105 we find a hint—for the writer tells us in the last paragraph of the necessity for looking after cows in dairies to see that the udders are not diseased, and that they are not capable of contaminating human beings—a suggestion for dairy inspection, but it is only a suggestion. The essayist nowhere insists upon dairy inspection. Then we read, "We certainly think steps should be at once taken by government to separate herds into two groups." That is a sort of casual suggestion in the middle of a paragraph, but it is not the method adopted in Denmark; it is more. On the last page you find, "The question as to whether animals should be slaughtered after having 'reacted' within a stated period does not appear to me to be necessary if they are isolated." Well you must have compulsory isolation then, but in those cases where isolation cannot be

carried out there is a difficulty at once which the essayist does not explain. He says the slaughter could not be very much enforced, "Our government could not do better than follow the example of Denmark." What is the example of Denmark? There was an article published in the journals some little time ago in which we had the method of Denmark insisted upon. There is no "method" in Denmark. It is a voluntary use of tuberculin to diagnose the case, then stop and do nothing more. The fact is this paper runs out like a knotless thread. The title suggests all that is good; the paper itself says: "Do not do anything," and calls it a "cheap process." Gentlemen, it is a "cheap process." (Cheers).

Prof. MACQUEEN: After the remarks that have fallen from the last speaker I think it becomes a member of the executive to say something in behalf of the essayist. We must not forget, notwithstanding our friend Mr. Hunting, that Professor Almond very willingly, and I consider magnanimously, offered himself to fill the breach in a very difficult position. (Hear, hear.) I wish to impress upon the members the thankless office which Professor Almond has undertaken, and although opinions may not be exactly unanimous as to the mode in which he has carried out the responsibility and honour he undertook, the fact remains that the paper is here, and it is open to discussion. Now as to the importance of the subject; swine-fever is a very interesting subject. We have heard a great deal about swine-fever to day, but on the score of importance I maintain that swine-fever is leagues behind tuberculosis, because of the danger of that disease to the human family. Now turning to the paper, at page 97, Professor Almond says, "If we wish to suppress any plague or prevent its spreading, it will be obvious that the first step in this direction is to be able to recognise the thing we are about to deal with." I daresay everybody will admit that we do recognise the thing we are about to deal with. Tuberculosis is not a disease of yesterday, and although methods of diagnosis at the present time, thanks to the assistance of tuberculin, are somewhat more advanced than formerly, there is not very much dispute as to the existence of tuberculosis when once the post-mortem is made. It is all very well to say the disease is contagious. No one disputes that, but we do not get any further forward by saying that the disease is contagious. We want to know in our particular practice amongst animals how tuberculosis is transmitted from one animal to another, whether by immediate contagion, or whether the virus is resident for a certain time in the surroundings of an infected animal. In fact, we might draw from the discussion on swine-fever and from discussions on glanders a good many questions that might be propounded to Professor Almond to-day. We want to know a little as to whether the habitations of infected animals carry the contagion for any particular time, whether the virus lurks about the place for weeks or months or years. Then as to the suppression of the disease. I think no one disputes the action of tuberculin in diagnosis. It may be necessary to repeat and to accentuate the statement that has been frequently made, that in tuberculin we have an agent that is very reliable, and even in cases where a certain amount of confidence is wanting on the part of the practitioner who uses tuberculin for the first time, all he has to do is to repeat the experiment, to repeat the test, and kill one reacting animal, not always the most affected but probably the least affected, and he will find the evidence on post-mortem examination. The suppression of the disease is the important point in Professor Almond's paper, and I will go the length of saying I am in entire agreement with Mr. Hunting as to the abuse of the title. I do not think the material contained between the covers of the pamphlet justifies the application of the three or four lines of title. This paper does not show us how to "gradually, effectually and cheaply" stamp out tuberculosis. It certainly gives us an insight into how we may gradually reduce bovine tuberculosis, but it does not give us one single idea how we shall effectively reduce it; and as to the cheapness or the dearness of the process the paper is distinctly silent. Then as to ultimately stamping it out we have only got the opinion which has been supplied to us once already by Professor Bang, of Copenhagen. Professor Bang, of course, is a very well known scientist, and on tuberculosis he is an authority, but the ways of Denmark do not always appeal favourably to the English, and we must remember that while in Denmark this system of trying to exterminate tuberculosis appeals to a government that is more liberal perhaps than wise, it has never yet successfully appealed to the government in office in this country. We may suggest better methods; and when I read the title of the paper I was in expectation of meeting some novel, ingenious, admirable, and, I might almost hope, some satisfactory method of "gradually, effectually, and cheaply" reducing bovine tuberculosis to manageable proportions, and ultimately stamping it out.

Mr. TRIGGER: The suggestion I would make with regard to the stamping out of tuberculosis is, first, that the influence of the male animal is not sufficiently recognised by farmers. The worst infected herds I have had to deal with have been where you could distinctly trace tuberculosis to the fact of having a tuberculous bull, and he has impregnated the stock. We have had hereditary tuberculosis on one or two farms. One case I remember specially, where a very good bull, brought down from Cumberland, infected the stock. At the meeting at Doncaster, when this same subject was discussed, a veterinary surgeon got up and mentioned the name of a bull that had been sold out of his district having infected their stock, and how very pleased he was that they had got rid of him. That bull came into our district and did the same thing there. Exactly the same thing I have found in pigs. I have known the male pig and all its progeny affected with tuberculosis. The male pig was a perfectly healthy animal to look at, and the existence of tuberculosis was never suspected. If you get the agriculturist to recognise the hereditariness, especially on the male side, because they very seldom rear from the cows that they suspect now, and therefore the female parent does not do very much harm—if we can get them to recognise the hereditary nature of the disease, to breed from bulls that do not react to tuberculin, and also to secure perfect hygienic conditions, we may greatly lessen tuberculosis.

Mr. MCGAVIN: I quite agree with Mr. Trigger's views with regard to the suppression of tuberculosis, a disease occuring both in the human subject and also in animals, which is bringing very great loss to the agriculturists of this country. I think we ought to approach the government to get power that no bulls should be allowed to serve cows unless the cows were tested with tuberculin. Another thing we ought to do is to get dairies inspected, so that no milk should come from animals suffering from tuberculosis, which is the great means of spreading disease. Dairies are often kept in a very slovenly way, and the inspection of dairies is not carried out half as it ought to be.

Mr. C. STEPHENSON: I did not intend to take any active part in this discussion. There are two points, however, that always strike me as being overlooked in nearly all the papers that I have ever seen upon tuberculosis. A great deal has been said here to-day as to the bulls spreading tuberculosis. I take it the gentleman meant that the calves got by that bull developed tuberculosis—that it did not contaminate the cow itself. (No.) It has been proposed to test the bulls with tuberculin. I think that is a question we should leave to breeders. They have this question very much at heart just now. But there are two things I wish to point out. I do not believe in the Danish system. I am perfectly certain we

cannot breed sound animals from diseased ones. It is all wrong about breeding from diseased cows. If you have a tuberculous cow get rid of her and do not breed from her.

Prof. ALMOND: I do not suggest it.

Mr. STEPHENSON: Denmark does it. They breed from tuberculous cows, and rear the calves.

Prof. ALMOND: Healthy?

Mr. STEPHENSON: Up to a certain point. They test them with tuberculin at a given time, that is, when they are about 18 months old. I am perfectly certain that it is in some cases hereditary. I have seen some calves with well-developed tuberculosis. Another point is that farmers who have a great deal of stock upon their places should be exceedingly careful as to the families they have on their farms, because the disease, I am positive, is very much spread from man to the lower animals. It is no use our taking all the precautions we can with our cattle and pigs if we do not also look after our human beings. These are the two points I want to impress upon you, that you should have no tubercular people where you have breeding stock, and next that you do not breed from tubercular cows any more than you do from a tubercular bull.

Mr. J. POLLOCK: I should like to ask Mr. Stephenson what is to be done on our sewage farms? Some of the best dairy stocks in our country are kept upon farms, the water on which is impregnated by sewage. What is to be done in such cases?

Mr. STEPHENSON: I have no experience of such farms at all. There is nothing of the kind in the North of England. I cannot speak to the effect of sewage farms.

Prof. MCFADYEAN: Like Mr. Stephenson, I did not intend to say anything on this subject, nor am I prepared to attempt to enter into it exhaustively, but I cannot sit silent and listen to the repetition of the completely exploded fallacy about the preponderating influence of the male in the propagation of tuberculosis. I think if there is one opinion formerly held and now thoroughly upset by the evidence it is that heredity plays an important part in the transmission of tuberculosis. So far from wishing it to go out from this meeting among breeders that tuberculosis of the bull is the great thing that spreads the disease, I should like it to be published far and wide that there is not one calf in 10,000 that comes into the world tuberculous, though both its parents were tuberculous at the time of conception. I had hoped it was not necessary to recognise that question. I will only say that the facts that have been stated again and again in support of that admit of quite a different interpretation. To tell us that stock which was healthy up to a particular year when a tuberculous bull was introduced into it, that after that the stock was tuberculous, and to ask us to believe that that is hereditary transmission of tuberculosis is evidently unjustifiable. Most of us contend that tuberculosis is simply a contagious and infective disease, and that you will never get a case, provided your stock is healthy, until you introduce either a human being or an animal suffering from it. Of course, if you go and buy a tuberculous bull and introduce him into your stock, you are likely to have tuberculosis afterwards quite apart from the hereditary transmission either of the disease itself, or of its tendency. To assume that this was a case of hereditary transmission is quite unjustifiable.

Mr. TRIGGER: I am not talking of an isolated case; I could give you a dozen if you want them.

Prof. MCFADYEAN: I retort to that that I can take you to places where thousands of calves are carefully post-mortemed within one month after birth, where a reward is given to the butcher who will bring to the notice of the veterinary inspector a tuberculous lesion, and in these places not more than one calf in 10,000 is found to be tuberculous; whereas, in those same areas it is known that about thirty per cent. of the breeding cows are tuberculous. In the face of these facts can anybody maintain that hereditary transmission of the disease can be playing an important part in the spread of it in this or any other country? I am sorry to have to disagree with Mr. Stephenson with regard to the Danish plan. I do not well see how Mr. Stephenson can say that you cannot breed healthy animals from tuberculous cows, when we have the experience of most reliable men to show us that you can. And *a priori*, that is all that would be expected. Say that a bull is the subject of tuberculosis; every particle of his body is not saturated with tubercle bacilli. You might offer £1000 for a tuberculous testicle taken from the bull, and I will venture to say that you would not be called upon to disburse it for a year or two, and if there is no tuberculous lesion in the testicle, and we know the blood is usually harmless when you inoculate large quantities even into the peritoneum of a guinea-pig, how are you going to account for the bull transmitting tuberculosis to a cow that he serves? It is all very well to condemn the Danish plan and say the right plan is to get rid of the tuberculous cow. We all agree with that, but it is not every man who can afford to do it, and when we remember that in this country one cow in every three is tuberculous, is it likely to raise the reputation of the veterinary profession for giving sound advice when a farmer consults you if you tell him to get rid of all those that are infected? Who is to take them?

The PRESIDENT: Sell them to his neighbours?

Prof. MCFADYEAN: I think all these are facts that ought to be well weighed before we scout the feasibility of the Danish plan. I am not going to quarrel with Mr. Hunting as to what constitutes a "method." It suits him at present to define a "method" in such a way as will exclude the Danish plan; but about this I am quite certain, that when we are individually consulted about how to stamp tuberculosis out of a particular place—and we are not all called upon to be national advisers, we are mostly called upon to give advice to our individual clients, then it is my opinion and best advice we can at the present time give is to follow the Danish plan as nearly as we can.

Mr. HUNTING: And sell the diseased?

Prof. MCFADYEAN: Just as if you did not know that they were tuberculous. (Laughter.) I am not saying that you are to test the animals and then sell them, but I do say that you should behave in that matter as if you did not know they were tuberculous. You find out which animals are tuberculous; the farmer has to isolate them and breed from them, and to dispose of that animal as he would have done if he had not isolated it. It is not dishonest, nor is the public worse served than if we said, "Shut your eyes to the thing, do not use any tuberculin at all, and then you will not know you are selling a tuberculous cow."

Prof. PENBERTHY: I, like Professor McFadyean, am anxious to convey the idea that we have no reason whatever for believing that the male parent commonly produces tuberculous progeny. If we want to deal with tuberculosis we want to understand something about it, and from that point of view alone I think this Association is indebted to Professor Almond. He may be an optimist as to the result of his plan; that is merely a matter of opinion. I personally, perhaps, should not have applied the title to the paper, but it is all a matter of degree, especially as regards "gradual" and especially as regards "cheaply." I should be extremely glad to hear something more quick, something that is more effective, and something which is cheaper for disposing of bovine tuberculosis.

Mr. J. R. GREEN: I would like to again raise the question of the part played by the sire in the transmission of tuberculosis to the young animal. I gathered from Professor McFadyean's remarks he thinks there is very little part played by the parent in the transmission

of tuberculosis. That being the case I would like to ask —a man has two or three cows, the cows have calves; what are they going to live on? Mother's milk? I think the most important part in the transmission of tuberculosis is played by the milk. Are they going to take the milk? I would like to have your opinion on the milk given to young animals from tuberculous cows.

Prof. McFadyean: Milk is not so dangerous as it is represented to be, or we should all be dead from tuberculosis a long time ago. I do not think anybody would suggest that they would just as soon breed from a tuberculous bull.

Mr. Trigger: I thought that was your suggestion.

Prof. McFadyean: Not at all. I simply denied the preponderating influence of the male in the transmission of disease, and I maintain the probability is that the bovine animal gets tuberculosis from neither its father not mother, but from its sister or brother, and that there is no preponderating male influence. It is simply transmitted like other diseases that we do not for a moment think ought to be called hereditary. I do not think the hereditary transmission of disease is one whit more important in tuberculosis than in glanders.

Prof. Almond: I think the speeches made certainly more than justify the introduction of this subject. I want to set myself right with the meeting. I may say I was not asked to write a paper at all in the first instance. I was asked simply to introduce a subject for discussion, and it was only a few days before July 1st that I received a communication from the Secretary of the Association asking me to put my views on paper. I did not undertake to give the details of the subject introduced, but simply to introduce it, and it was only on receipt of this communication that I put down on paper the facts that I had by me, and which you have in the paper before you. I suppose I ought to feel myself honoured by the remarkable opening attack which I received from the redoubtable champion whom I see before me—Mr. Hunting. I must say I was very doubtful as to whether he had seen the paper. I knew he had seen the outside because he held it in his hand, but that he had seen the inside of the paper seemed to me to be altogether unlikely, because he stated that I said absolutely nothing about dealing with the suppression of the disease.

Mr. Hunting: I have it marked from beginning to end.

Prof. Almond: I gave the title long before the paper was written, and without any intention of writing a paper. Mr. Hunting says absolutely nothing is said about the suppression, or any practical method of dealing with the suppression of the disease. Now, although when I had a proof of the paper—it came to me late at night, when I was very tired, it had been lying at my house a couple of days before I saw it—I sent it off in very great haste, but admit that the latter part of the paper would be more forcible if it were put in paragraph form, and it is proposed to do so in the transactions. We have here a method which to my mind is perfectly satisfactory for gradually, effectively and cheaply stamping out this disease in cattle. I base my opinion upon the fact of the disease being almost, if not quite, wholly propagated by infection, which has only quite recently been known to be a fact, and it is evident we have amongst us many members of this Association who have not given sufficient consideration to the evidence that we have at hand of the infective nature of this disease, and that it is not an hereditary disease. Mr. Hunting said I made no practical suggestion with regard to the suppression. One suggestion I make is this, that the Government should immediately impose a restriction on infected animals, that is to say, they should employ the means we have at our disposal to divide all herds into those that react and those that do not react to tuberculin, and then enforce the isolation of those that react to the test. I therefore suggest that these animals should not only be separated, but that they should be marked in such a way that you cannot mistake it. I submit that is a practical suggestion.

Mr. Hunting: I quite agree, only you finish up by saying "the Denmark plan." This is not part of the Denmark plan.

Prof. Almond: I did not confine myself to the Denmark plan. My suggestion is based on the evidence I obtained from Denmark. In my paper you will find a great body of evidence on the immunity of young animals from hereditary tuberculosis. Professor Macqueen asked: How does the disease spread? I say by infection, and by infection only, except in the rare placental instances, in which I am supported by Prof. McFadyean in saying that it occurs only about once in 10,000 times, and perhaps not so frequently. He asks, further, whether it is spread by immediate contagion. I do not think there is any doubt about that whatever, that it is spread by immediate contagion, and it will be spread so long as the habitations of cattle or men contain tuberculous subjects. Undoubtedly it will be so spread, and when they are removed the so-called hereditary tendency which the calves of tuberculous parents are said to have is a matter of no consequence. Unless the bacillus is introduced the tendency may be neglected altogether. Prof. Macqueen says the Denmark method has not appealed successfully to our government. Why? Probably because the facts have not been sufficiently long known. I take it, when the facts have reached those in authority they will be able to deal with the matter in a satisfactory manner. I am quite satisfied from the speeches of certain members that it is well that this subject was brought forward.

Mr. Samson: I think we should not leave without giving a hearty vote of thanks to Prof. Almond for his very able and interesting paper, dealing as it does with a subject of great importance. I move that we give him a very hearty vote of thanks.

Mr. W. Hunting: Mr. Samson has anticipated me, for I was going to offer my thanks to Prof. Almond too. I may differ entirely from the conclusions a man may draw in his paper, I may find fault with the paper, but I have the highest appreciation of the man who wrote it, and of what he has done for us. (Cheers.)

The resolution was carried by acclamation.

Professor Almond: I thank you, sir, and the proposer and seconder, for the kind way in which they have proposed, and also the members for the way in which they have accorded to me this vote of thanks.

THE SANITARY CONGRESS.

Section I.—Sanitary Science and Preventive Medicine.

This section resumed its deliberations on Monday, September 7th, at the Durham University College of Medicine, under the presidency of Professor W. H. Corfield, M.A. M.D.

Tuberculosis and Public Health.

The three papers bearing on this subject were read, and then discussion taken on the whole. In the absence of Dr. Woodhead his paper was read by Dr. Sykes.

"Milk Control, Milk Inspection, and Milk Laboratories." In the course of the paper Dr. Woodhead said—He was one of those who did not believe that direct hereditary transmission of tuberculosis took place except in those cases in which there was general tuberculosis of the mother usually, or the uro-genital organs of the father or mother were affected, and where there was such affection—as one sometimes saw in cattle—the rule was that the fœtus did not come to proper birth at full time.

On the subject of the propagation of tuberculosis through the ingestion of the meat and milk of animals suffering from tuberculosis, Dr. Woodhead said they had a right to expect that in the case of such an important article of diet, it should at any rate be derived from uncontaminated sources, and although for the present it might be necessary to disinfect milk by heat, that arrangements must be made to control the production and distribution of milk in such fashion that ultimately it would not be necessary to take precautionary measures, such as heating and the like, in order to be sure that it contained no living tubercle bacilli. After a careful study of the question of milk control in France, Germany, Denmark, and Sweden, he was convinced that until the Medical Officer of Health, the veterinary surgeon, and the local authorities could act together and in full accord they should not attain an ideal control of their milk supply. Every dairy should be registered—the number of cattle and the number of workers being carefully noted; each worker and each animal should have its own bill of health; the Medical Officer and the veterinary surgeon should, together, go over the accommodation for the cattle, the ventilation and the general conditions of the cow houses. This being done the veterinary surgeon should, every fortnight, pay a visit along with the Medical Officer of Health, and each should examine his own patients—the doctor noting the health of the workers, making inquiries as to their general condition, and noting down anything in the hygienic condition of the house or the state of health of the inmates that might seem worthy of notice. Whilst this was being done the veterinary surgeon should examine a certain proportion (one half) of the dairy stock, so that every animal was examined at least once a month. But, in addition to that, each animal that was found to be suffering from any disease, and especially from disease of the udder, or from tuberculosis of any kind, should be carefully isolated and examined at each visit, and until the veterinary surgeon gave a certificate that such isolated animal might again go into the dairy none of the milk from such animal should be allowed to be sold; it might be boiled and given to the pigs, or it might be boiled and then thrown away, but it should never be allowed to go into the supply for human consumption, or allowed to be thrown away even in the raw state.

Mr. W. HUNTING, F.R.C.V.S., also read a paper on "Bovine Tuberculosis in relation to Public Health." He assumed that it was absurd to try and protect human beings by inspecting meat and milk, whilst doing nothing to control the source of infection, or to limit the disease in the animals from which meat and milk were derived. Any scheme to protect man must be conjoined with one to protect animals. The essential step was to include tuberculosis in the Animals Diseases Act, and to apply such regulations as had been found beneficial in suppressing analogous diseases of animals. Much might now be done without special Parliamentary action by a simple Order of the Board of Agriculture, but success would be more complete and certain if the whole subject was dealt with in a distinct and separate Act. As a scheme for such an Act he suggested compulsory notification by the owner of the existence of tuberculosis in an animal or a carcase, isolation of infected animals, application of the tuberculin test to animals that were suspected, or which had been in contact with diseased ones, compulsory slaughter of all animals showing distinct clinical signs of the disease, and compensation to be paid by the local authority for every animal slaughtered, to the extent of one-fourth the value, and no animal to be valued at more than £30.

Dr. SCURFIELD, the Sunderland medical officer of health, read a paper on "An Anti-Tuberculosis Programme." Granting that infants were born free from tubercular disease, he asked what better example they could have that the disease was infectious than that consumption ran in families, where members infected one another. The predisposition of any individual to the disease must be an unknown quantity. The chief sources of danger were human beings suffering from pulmonary disease with expectoration, and cattle. Some notification of human tuberculosis, at any rate when accompanied by a discharge, was desirable. On the receipt of a notice, the Health Department would supply the family with instructions how to deal with the patient. The instructions must not be of an alarmist nature, but must point out the vital precautions to be observed in order that the consumptive might live in the house with other occupants. The Health Department would inspect rooms and dwellings after death, and supply disinfectants as might appear necessary. If deficiency of accommodation made it impossible to have proper precautions, the question of providing homes for consumptives would have to be considered. With regard to the fear that had been expressed that notification would brand a sufferer as a social outcast, he was of opinion that there was no foundation for the fear. Dr. Scurfield concluded by moving the following resolutions:—"That this section recommends to the Council of the Institute:—

1. That some system of notification of human tuberculosis, at any rate when accompanied by a discharge, is desirable.

2. That sanitary authorities should urge the Management Committees of Hospitals, Workhouses, Schools, Asylums, &c., in their district to give preference to farmers who will supply milk from herds guaranteed free from tuberculosis by the tuberculin test.

3. That sanitary authorities should advertise from time to time in local newspapers lists of farmers who supply milk from herds guaranteed free from tuberculosis by the tuberculin test, in order that private consumers may know where to obtain such milk.

4. That the Government be urged: firstly, to supply the tuberculin test free of charge to all farmers who agree to get rid of the animals shown by the test to be affected, and to only add to their herds in future such animals as stand the test; and, secondly, to insist on the marking of all animals which, when tested, show the reaction, and to enact that such animals be sold only for slaughter, and be slaughtered only under the supervision of qualified meat inspectors.

5. That public abattoirs be established in every district, and that the use of them for slaughtering purposes and meat inspection be made compulsory.

6. That compensation be given to butchers for the carcases of animals condemned for tuberculosis when these animals have been bought bona fide as sound, and before slaughter showed no signs of disease or wasting."

DISCUSSION.

Dr. R. S. MARSDEN (Birkenhead) opened the discussion on the three papers, and said, as being connected with one of the largest meat-supplying centres in the country, that he was greatly indebted to Professor Woodhead and the other gentlemen who had contributed so much valuable information. But he could not agree with all that had been put forward. He combatted Professor Woodhead's idea that it was absolutely necessary for meat to be inspected by veterinary surgeons. As matters stood at present, a great many veterinary surgeons were imperfectly educated with regard to pathology, and were very much behind their time. Whilst he would welcome the assistance of competent veterinary surgeons in meat inspection, he still protested against the general view that the only person capable of acting as a meat inspector was the veterinary surgeon. In his opinion, the best man for the purpose at present was a well-educated butcher of long training, and he might say that at Birkenhead they thus acted, on the principle of setting a thief to catch a thief. With regard to Dr. Scurfield's proposals, he was

opposed, as representing a Sanitary Authority, to giving a certificate of immunity to any place whatever. It would be a dangerous plan in any case, and especially dangerous in cases of tuberculosis.

Dr. JAMES NIVEN (Manchester) agreed in the main to Dr. Scurfield's propositions, and, so far as regarded the proposed certificates, he did not think that they would commit the authorities to anything binding. Regarding the necessity of applying the tuberculin test, he was fully convinced of its value, on seeing its results in Denmark; and he mentioned that in Manchester the veterinary surgeons had permission to obtain tuberculin for examination purposes at the public expense.

COUNCILLOR JAMES WILLOCK (Glasgow) said the milk supplies of hospitals should be put to the tuberculin test. In the Glasgow hospitals the farms from which tenders were received for milk supplies were inspected by the medical officer. He was sorry to say that one thing they were deficient in in Glasgow was a thorough meat inspection. While the Corporation of Glasgow had the markets under their charge, and meat must be killed under their charge, the inspector in the market was an ordinary policeman. (Laughter). Their sanitary authorities had not power to inspect meat in the market, and had to stand outside and watch what came out. He was in favour of the Homes for Consumptions, though he doubted whether cases in the early stages would be sent in such numbers as to satisfy doctors.

Dr. VACHER: expressed himself as in accord with Dr. Scurfield's proposals. With regard to the proposed list of farmers who would guarantee their herds as free from tuberculosis he did not think the list would be a long one—in his county it would begin and end with one man. With reference to the amount of compensation to be given to butchers he thought the best form of compensation would be that which obtained as to other infectious diseases in animals, and if one-third were allowed that would meet the justice of the case.

Dr. J. F. J. SYKES (London) said the resolution did not commit them to any particular system of notification. It might safely be carried, but there were some difficulties in the way. They could not treat human beings like cattle, and test them with tuberculin, although he did not see that there should be any great difficulty in that matter, and it would be a good thing if persons who were uncertain as to whether they suffered from tubercular disease would agree to a test in order to directly diagnose what physical examination could not recognise. With regard to the other resolutions, he would like to see cattle slaughtered where they were bred and reared, and not in towns.

Professor OLIVER, M.D., said he had been much struck by the fact that in many of their large towns their dairies were not registered and inspected. He agreed with Professor Woodhead that their dairies should be registered and inspected jointly by the medical officer and veterinary surgeon, each looking after his own patient. As to the view of Dr. Marsden on the employment of veterinary surgeons as meat inspectors, he quite agreed that at the present time the veterinary surgeon's knowledge of pathology was not, in a great many instances, what it ought to be; but they must make a beginning somewhere, and now that veterinary surgeons were being better educated in this respect, he was in favour of the association of the medical officer with the best veterinary aid possible. They must not forget that it was only within the last few years that the medical officer himself had obtained the knowledge of public health that he had. He agreed with the compulsory notification of the disease, and with the application of the tuberculin test, as he was convinced that the latter would do no harm to the animals. He hardly agreed with the remarks concerning the advisability of granting certificates, but generally speaking he thought the propositions would give the Council of the Institute a basis of discussion and investigation.

The PRESIDENT, in answer to Mr. Bailie Dick, said the propositions would be duly considered by the Council, who would be assisted by experts.

Dr. ALFRED HILL (Birmingham) drew attention to a passage in Mr. Hunting's paper which said: "Advanced cases would be immediately slaughtered; the rest would be isolated until such time as they were fit to be killed for trade purposes." What were trade purposes? Was it supposed that these animals were going to get well, or was it only that their skins and other parts were to be applied to trade purposes?

Dr. J. A. MALCOMSON (Middlesbrough) spoke against compensation being given to butchers. He had known some butchers who bought diseased animals in the hope of getting them past the inspector. (Hear, hear.) They should compensate the bona-fide owner of the animal which was diseased.

REPLY.

Mr. HUNTING, in reply to the discussion, said he wished first to remark on Dr. Marsden's statement that some veterinary surgeons were unfit to act as meat inspectors as they were insufficiently educated. This was not a very serious accusation and it applied with some force to other callings—including bishops and medical officers of health. His profession only a few years ago were obliged to register 3000 men who had never been to College and as these had all a right to the title veterinary surgeon the public were unable to distinguish. In reply to Dr. Hill as to the meaning of "trade purposes" he referred to slaughter for meat and to retaining cows for breeding purposes. It must be remembered that the tuberculin reaction was very searching and indicated the very smallest amount of tubercular infection. It reacted in cases which might safely be kept for breeding, and in cases where the carcase was quite fit for human consumption when the animal was a store it might be necessary to keep it some time for fattening. With regard to Dr. Malcomson's fear of fraud following the payment of compensation he believed an exactly opposite effect would result. Compensation would do away with the incentive to hide disease, and every demand for compensation would direct the authorities to the source from which diseased animals were obtained.

Dr. SCURFIELD replied giving reasons and statistics showing how untenable was the position of those who believed in heredity as a cause of tuberculosis. He distinguished between heredity and congenital infection, and supported the resolutions of which he had given notice.

The Resolutions were then put and carried *en bloc* with only two dissentients.

PROFESSIONAL ETHICS RUN MAD.

It is curious to observe how otherwise reasonable persons may on occasion develop opinions of a fanatical kind regarding a special topic in which they are interested. The question of medical men advertising is such a topic, and judging from recent utterances made by certain members of the profession in conclave assembled, their wits must really have gone wool-gathering. That a physician should denote his profession on his door-plate would seem to ordinary mortals a reasonable enough proposition, but certain professors of medical etiquette would appear to object to that apparently harmless proceeding, and one which would seem to be necessary as a preliminary to the work of the physician in earning his livelihood. I suppose the red lamp has long ago been tabooed as disreputable; and any reason-

able announcement of interest to patients, made, say in a local newspaper, to the effect that Dr. So-and-so has changed his residence, would call down on the head of the medical migrant a torrent of expostulation. Then there is the question of writing books. These bear the names of their authors on the title-page. This is regarded as advertising in an ethical sense.

The truth is that the public laugh, and laugh heartily when, as was recently the case, they are able to read of the squabbles of medical men on this advertising question. A professional man must be known to the public if he is to be successful, and whatever mode he adopts to make his existence and his qualifications known is surely "advertising" whether it is by a brass plate, a red lamp, a treatise on an obscure ailment of the tympanic membrane, a pushing and energetic wife, or by being frequently called out of church. One observes that the successful and well-known practitioner is usually chosen to lecture his poorer and struggling brethren on the enormities of advertising. It might be startling to know the history of many cases of success in medicine, and to note how much of that success has been due to a judicious, and I hold perfectly legitimate method on the part of the medico in keeping himself and his merits well under the public eye.

[In Science Jottings, by Dr. Andrew Wilson, *Ill. Lon. News*, Aug. 29.]

Personal.

Vet.-Capt. RAYMOND was the winner of a race for mounted officers, in which it was necessay after saddling the horse to pull up and wait for a lady to thread a needle, at a tournament given by the 8th Hussars at Leeds, on Saturday, August 29th, in aid of the Leeds branch of the National Association for the Employment of Reservemen.

Mr. HARROLD SESSIONS' Shorthorn bull "Spring Daisy," roan, 64879, took 1st prize at Brighton last week at the Sussex County Show.

NEW REGULATING ABSCESS LANCET.

By P. MAXWELL EDGAR, M.R.C.V.S., Daventry.

This instrument consists of a director and a concealed knife and is made to open scissor fashion, the director is drawn out to a point for making the puncture and the blade shaped somewhat like the concealed knife of a bistuary cache for making the incision. A screw and a slide on the director regulates the depth and another screw on the handle regulates the extent of the incision. The instrument will go in an ordinary pocket case.

In opening an abscess in the region of the parotid and submaxillary glands sometimes, owing to the excitable nature of equine patients, a large and even dangerous incision is made: with this lancet such an accident is impossible owing to its construction.

Messrs. Arnold & Sons, West Smithfield, London, are the makers.

ARMY VETERINARY DEPARTMENT.

Vet.-Capt. E. H. Kelly arrived 31st ult. on sick leave of absence from South Africa.

Vet.-Capts. F. Raymond and A. F. Appleton, and Vet.-Lieut. W. J. Tatam embark for India 11th inst.

Vet.-Lieut. R. H. Holmes arrived at Aldershot from Okehampton 5th inst.

Vet.-Lieut. A. C. Newsom arrived at Edinburgh for duty with 6th Dragoons, 8th inst.

OBITUARY.

JOHN WESLEY GADSDEN, M.R.C.V.S., Philadelphia.
Graduated, Lond., April 30th, 1858.

Dr. John Wesley Gadsden, whose death at the age of 64 occurred on Wednesday, at his home, 2109 Arch Street, was one of the best known veterinarians in this country. He was an Englishman by birth, but for nearly thirty years past he had been a resident of this city, and earned an enviable reputation here and in other parts of the country.

He was born in Hemel Hempstead, Hertfordshire, England, October 11, 1832. His father was a farmer, and, intending his son to follow the same pursuit, at the age of 17 apprenticed him to a scientific farmer, with whom he remained two years, but not liking the business he left and went to London, where he commenced the study of veterinary medicine, acquiring practical knowledge of the profession with several practitioners, and on January 1, 1856, entered the Royal College of Veterinary Surgeons, from which he graduated on April 30, 1858.

HIS EARLY WORK.

Dr. Gadsden was first engaged as assistant by William T. Stanley, who had a large practice in Leamington, Warwickshire, with whom he remained about a year, when he purchased a practice for himself at Bracknell, in Berkshire. He remained there until the fall of 1867, acquiring an extensive practice, and also serving by appointment of the English Government as Veterinary Inspector. He then came to the United States and located in Philadelphia in January, 1868.

Here Dr. Gadsden devoted himself to his profession and his services were in demand by some of the best known people in the city. He attained prominence, however, not so much by reason of his extensive practice, but by his efforts to stamp out contagious pleuro-pneumonia. When he first declared that the disease was contagious and proceeded to demonstrate it, he met with no little opposition, his belief being that where the disease existed it was imperative that the affected animals should be killed.

He was appointed veterinary inspector by the Department of Agriculture and did most effective work, always co-operating with the State authorities. His efforts in this direction brought him into prominence and he was called as an expert before a committee of the United States Senate on matters relating to the veterinary profession. For several years he acted as examiner in the Veterinary College at Montreal. He retired from active practice in 1891, but retained his interest in veterinary matters up to the time of his death.—*Philadelphia Inquirer*, Aug. 14th, 1896.

JOHN TREVOR JONES, M.R.C.V.S., Oswestry.
Graduated, Lond., March 30th, 1880

Death took place on Friday morning, August 28th, after a painful and trying illness. Mr. Jones, who was forty-two, was a native of Rhyl, and after leaving school he became dispenser to Dr. Roberts, of Rhyl. Showing

marked ability, he afterwards left for London as assistant to Dr. Roberts of the City Road. During his spare hours he attended the lectures at the Veterinary College, Camden Town, and qualified as a V.S. without the knowledge of his employer. Shortly after the death of Mr. Tom Roberts, V.S., he began practice in Oswestry, obtained several borough and county appointments and for some years had a large practice, being exceedingly popular among all classes. Some two years ago he lost his wife. He was a Freemason, and leaves three boys, who, it is hoped, the well-known generosity of the Masons will assist into a school, as they are quite unprovided for.—*Oswestry Advertiser.*

CORRESPONDENCE.

"ADVERTISING."

SIR,

I enclose outside cover of catalogue of a recent horse show. You will notice one of these advertisements emanates from a distinguished member of Council. The other gentleman whose advertisement appears has evidently only followed the lead of his elder "with a little more effusive detail." This V.S. is evidently determined to make for himself a great future among the nimrods, for in his window (I was going to write "shop window" say "surgery," it sounds better) he displays a most rare collection of "bones, overgrown hoofs" &c., mingled with powders, balls, and drenches that if used will speedily cure all ailments.

You will also observe that a splendid way of advertising and showing yourself is to enter your pony and gig in the local class *for the best tradesman's turn-out.* Here is a chance to show the public your turn-out including the V.S. himself. Let me mention a few of the competitors :—

1. Bus' and pair used from hotel to station.
2. Butcher's cart, decorated with a dressed sheep.
3. „ „ „ „ living prize ram.
4. Greengrocer's „ „ vegetables.
5. Wine and spirit merchant decorated with casks and bottles.
6. Veterinary surgeon's gig with indiarubber tyres and two large brass bells.

Now, sir, comment is useless. If the Council wish to stop advertising why not send a circular to every member of the profession, and if after this warning members continue to advertise, then the Council should at once put its power in force. If, however, the Council is weak on the point let them allow members to do as they like. At the present time the Council is "straining at the gnat and swallowing the camel."—Yours truly,

NORTH COUNTRYMAN.

IS LAMINITIS HEREDITARY?

SIR,

I notice the letter in *The Record* on the 5th inst. on the above subject, and as replies are asked for I have much pleasure in giving you my experience in regard to laminitis gained in connection with the management of a considerable stud of breeding mares.

I would not like to assert that laminitis is never hereditary, but I know from experience that it is not so in some cases.

I knew an extra well-bred and highly thought of Clydesdale stallion which had laminitis very badly in both fore feet, the result of injudicious preparation for show purposes. This horse, notwithstanding his helpless condition, was extensively patronised on account of his individual merit and first class pedigree, and consequently there are a large number of his stock in this district. His first crop of foals is now 17 years old, and though I am constantly seeing some of them I have not yet come across one affected with laminitis.

I do not mean to argue from this that it is quite safe in every case to breed from a stallion with chronic laminitis, at the same time I would never refuse the services of an otherwise good horse with laminitis brought on as it were by accident from errors in feeding, etc.—Yours etc.,

R. BRYDON, M.R.C.V.S.

SWINE-FEVER FEES.

DEAR SIR,

I read with much delight in your report of the Yarmouth meeting, the remarks of Mr. J. G. Parr of Leicester, for at least we have found one member out of the 3000, perfectly satisfied and contented with his treatment by the Board all round. There is no mistaking it, here are the words. "We have pretty well *what we want* and are VERY WELL PAID for it INDEED."

Would Mr. Parr be so good as to give us an idea how he is paid at Leicester for his services under the new regulations? If there is any additional remuneration on the old scale for the extra time and duties. If he would favour us with the charges allowed him in the case below I should be greatly obliged, as it was my first case under the new blue form instruction :

Journey—four miles.
Inspection of whole of pigs on premises, between 40 and 50 in number.
Valuing three suspected pigs.
Killing same.
Post-mortem examinations on the three suspected pigs and one dead, four in all.
Packing up parts for London.

Time occupied from starting from house to time I left above premises, no intermediate calls, 2½ hours—9-11.30.

Being my first case, as mentioned, under new *régime*, I was careful to follow my instructions to the letter, and as I thought my 2½ hours time and in the best of the day, and services was worth more than One Guinea, the old fee, I had the boldness to charge double, at the same time making representation to the Board by letter of all the circumstances.

My answer came regretting that the Board could not pay fees on a higher scale than that sanctioned by the Treasury and to amend my account.

Thanking Mr. Parr for his reply and you for the insertion of this letter—I am, dear Sir, yours faithfully,

Sept. 9th. J. W. EDWARDS.

"F. H. A. S."

DEAR SIR,

Considering that the "Highland Agricultural Society" was, I believe, merged into or absorbed by the Royal College of Veterinary Surgeons, have the holders of the certificate the right to put the letters F.H.A.S. after their name? This question has been asked of *The Veterinary Record* twice previously, but—probably for some reason—it has not yet been answered or noticed.

I shall think it a favour if you will kindly allow this letter to appear in your periodical.—Yours faithfully,

QUERY.

[The holders of the Highland Society's Veterinary Certificate have a perfect right to use the letters F.H.A.S. if they are Fellows of that Society. The Highland and Agricultural Society of Scotland is a very great and powerful body, and not likely to be "merged or absorbed" by any less powerful.—ED.]

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Prof. Dewar, Messrs. R. J. Dawson, E. White Wallis, G. Upton, J. Blakeway, H. Sessions, J. R. O'Reali, W. Skinner, E. Whitly Baker. "North Countryman."
American Vety. Review (Sept.), *The Ramsbottom Observer.*